

GLAST SWG Telecon DRAFT minutes  
Thursday, February 16, 2006

Attended:

David Band  
Guido Barbiellini  
Elliott Bloom  
Patrizia Caraveo  
Lynn Cominsky  
Chuck Dermer  
Brenda Dingus  
Neil Gehrels  
Josh Grindlay  
Rick Harnden  
Neil Johnson

Tune Kamae  
Don Kniffen  
Giselher Lichti  
Chip Meegan  
Julie McEnery  
Peter Michelson  
Martin Pohl  
Steve Ritz  
Stephen Thorsett  
Kathy Turner  
Al Vernacchio

Steve welcomed everyone.

Announcements: There will be a GUC telecom tomorrow.

**Rick Harnden - NASA HQ:**

- The budget has been made public. GLAST is in good shape, program is going well; other NASA science budgets not fairing well. HQ support is still very strong.
- Martin asked what is the forecast for the GI program. Steve responded, the same as before. NASA has its budget and they have planned accordingly.
- Some changes at HQ are: Since Administrator Griffin has taken over, changes are being made slowly. Anne Kinney is no longer director of the Universal Division. Rick Howard, her deputy, is the acting division director until a replacement has been found. Rick Howard is aware of GLAST and is supportive of it. He has been an excellent deputy. No word on search committee or its progress.
- The Universe Division is changing its name back to the Astrophysics Division shortly.

### **Kathy Turner – D.O.E.:**

- Had the CD4 a week or so ago. D.O.E. deliverables are signed off and now using operations money.
- David asked if the DOE science budget increased. Kathy responded that for FY07 it's up 8% for high energy physics. This will probably be used for new projects. It will not affect GLAST.

### **Al Vernacchio – Mission Update:**

- Budget -well supported by HQ.
- Teams are making excellent progress.
- Issue at SLAC - vibration failure - flight RAD750 boards. Meeting with BAE to rectify problem.
- Spectrum Astro are making progress - the power boxes are thru vibration testing and nearing completion. Will soon be ready for integration.
- Propulsion module - complete.
- Spectrum Astro have received the first solar rays.
- Release mechanism change - reconsidering piro device. Working with NEA to develop.
- Continuing with MOR preparation review, scheduled for March 15-16.
- Launch vehicle started - ICD; Delta II heavy issue should be resolved by April. All Delta II H launches are currently on hold (but none are scheduled).
- Tight September 2007 launch date.

### **Peter Michelson – LAT:**

- British Aerospace is currently working on the 750 boards. It's possible that they may remove boards for inspection.
- DC-2 - Data Challenge 2 - has its kick off meeting March 1-2. Julie is in charge. Close-out will be held mid-May. DC-3 will be held next year and completed several months prior to launch. These also involve GBM and SSC - developing and testing tools.

### **Non-US partners:**

**Italy** - Patrizia stated that ASI is funding science and is hoping the papers are signed soon.

**Japan** - Tune stated that Japan is to support several scientists to come and work on GLAST.

## **Chip Meegan and Giselher Lichti - GBM**

- Southwest Research is most confident that they found and resolved the EMI problem. They are going into the chamber today to test.
- Power box was sent back to Germany for some tweaking. It does work well.
- Giselher stated that there is a contractual issue in Germany but hopes to have it resolved soon. Letter of liability and letter of intent are difference documents in Germany.

## **Julie McEnery - GRB Alert Latency status:**

- **GLAST Burst Alert Timing - Outline of the system** - A burst alert is generated by either instrument and Burst Alert Telemetry is sent to the spacecraft. The spacecraft sends out the alert telemetry which will initiate the TDRS MA 1 kbps link. Once a link is established subsequent messages flow through TDRS to white sands, to the MOC to the BAP and then to GCN.
- **Expected performance and Swift** - After the link is established, it will take ~3-4 seconds for an alert to flow from the spacecraft to GCN. This is consistent with the performance seen by Swift - always less than 2 s. This is faster than GLAST expects, but they are using a 2 kbps data rate and GLAST currently plans to use 1 kbps (GLAST has the ability to use 2 kbps if it is determined that the signal quality is good enough, then we may well use the 2Kbps data rate also.) This will be directly verified in one of the ground system tests. This is fairly well understood and no problems are expected.
- **Getting a TDRS lock** - The less certain part of the process is the time needed to establish a connection with TDRS. This involves the PTP (at White Sands) recognizing that it is receiving bits (bit syncing) and then recognizing that it has GLAST frames (frame syncing). There is a spread in the amount of time taken to do this. Some of it is statistical, there are also variations in the quality of the signal that depend on things like the alignment of TDRS with respect to the spacecraft. Estimates of this range from <1 to ~4 seconds. Swift keeps their S-band transmitter on and in contact with TDRS at all times apart from 15-30 second gaps

when they are switching from one TDRS to another, so the sync up process does not have to happen in Swift they send alerts.

- **Mitigation** - We minimise the time to get important (i.e. location) alerts out by generating a message as soon as a burst trigger is detected. This message only contains basic information about the trigger and is used to start the sync up process. The second and third messages contain basic information about rates. Meanwhile the GBM is continuing to accumulate data to allow a calculation of location. The 4th message (which can be repeated up to 5 times) contains the location. Thus, the time to transmit the location alert from the spacecraft to the GCN will be less than the time to transfer the first message (because the sync up will have already happened).

### **Neil Gehrels - Booth Staffing:**

- The booth that is being discussed is the GLAST booth - produced by Sonoma State. There are times at the AAS meetings where there is no scientist at the booth to answer questions. At this last meeting when Nick White and Roger Blandford walked past the booth, only JD Myers was there.
- At several upcoming meetings we are going to try something different: GRB meeting, June 5-9, in Venice, there will be a GLAST Workshop on Tuesday evening with presentation and Q&A; Great Observatory Workshop in Pasadena in May, would like to do same thing - presentation and Q&A. The booth is not going to be sent to as many meeting, primarily the HEAD and AAS meetings.
- We need additional graphics, handout like the silly putty. There has not been any information on GI data use at the booth.
- Neil will be taking the lead to organize the scientists to work the booth. One or two scientists at the booth during the breaks are needed. Please contact Neil to volunteer or he will contact you.
- The EPO function at the booth is going great, but need the scientists to take on another dimension.
- David Band stated that the GLAST posters are put up in the booth after they are presented. These are also posted on the website.

### **Steve Ritz - Symposium Status:**

We are looking at February 2007 for the meeting on the West Coast. Are looking into the Stanford area, either on campus or at a local hotel; have looked into venues as far south as Monterey and north to Wine Country. Would like the place to be convenient to the airport. Must accommodate as many as 450 participants. Peter stated that any week in February is open on Campus. Peter is looking into more information on the campus venue.

### **Lynn Cominsky - Planetarium Show and E/PO:**

- The Planetarium show opened in Denver several weeks ago. It's an amazing 20 minute show on Black Holes. The planetarium show is a full format digital dome show, but not a IMAX show. There were articles in the local papers the following day. And will appear in the New York Science Times this coming Tuesday. It has been a sell-out since it opened. It will open nationwide on April 1<sup>st</sup>. Can be leased from the creators.
- The NOVA TV show will air September 26, 2006. It's an hour long.
- David suggested that a scientist be present as part of the planetarium show.
- Give away ideas are needed.
- Pop-up book is coming along.

### **Telecon Schedule:**

Thursdays at 11 AM East Coast Time:

April 20

June 15

August 17

October 19

and December 14.

### **IDS Reports:**

#### **Chuck Dermer:**

1. Spurred by recent HESS observations of the high-mass microquasar LS 5039, three papers on gamma-ray emission from microquasars were completed and are either in press or have been published in ApJ with co-authors M. Boettcher and S. Gupta (Ohio University).
2. Implications of Swift results for GLAST observations of GRBs are being studied, leading to one submitted ApJ letter with A. Atoyan on a

neutron-star collapse model for short hard GRBs, and a second, in preparation, on emission from external shocks.

3. In work with postdoctoral associate T. Le at NRL, blazar statistics with EGRET are being used to make predictions for GLAST (updating an earlier study with S. Davis), including the diffuse extragalactic gamma-ray background. This will be presented at the AGN face-to-face meeting at DC2.

**Stephen Thorsett:**

Reported that NuStar has been cancelled

**Martin Pohl:**

I got accepted a paper on gamma-ray emission from binary stars that in great detail discusses all relevant processes and concludes that binary stars are interesting targets for GLAST, but not necessarily for the ACTs. The lead author of the paper is Anita Reimer.

We also finalized work on a 3D-model of the distribution of molecular gas in the galaxy, that is based on orbit velocities derived with a SPH simulation of the bar and spiral arms in the inner galaxy. Work has been started on the deconvolution of the data for atomic hydrogen.

**Brenda Dingus**

Brenda and the Milagro collaboration report the first observation of TeV diffuse emission from the Galactic Plane. (Atkins, et al. Phys. Rev. Lett. 95, 251103, December 2005).

Adjourned

Feb. 22, 2006